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Subject: LWG Round 2 Report
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Eric and Chip,

In the interest of getting questions/comments down on paper the following came out of my review of Chapter 10.

1. Hill Topping – I agree with your earlier statement that it is more FS than RI related. That said, the LWG is providing us a snap shot of what we should expect to see in the FS. So here is our opportunity to provide them feedback. My main issue with the mechanics of their method is the replacement of background concentrations into the virtually removed polygon sediments. It would be more appropriate to replacement the sediment in the remediated polygon with the highest concentrations from adjacent polygons. Also, the LWG established background for this exercise based on sediment data between river miles 15.3 to 26. Contaminants concentrations from this reach of the river are lower than the reach immediately upstream of the current study area (river mile 11.5 plus). The pending upstream data would be a good data set to use for this application. Background (i.e., immediately up gradient of the study area) concentrations could be used where they are higher than the adjacent polygons. Sediment from adjacent unremediated polygons is the proximal source of a contaminate load for the remediated polygon. Making these changes to the methodology will likely result in lower iPRGs than calculated by the LWG and potentially translate into larger iAOPCs as well.

How does this relate to data gaps? The main issue here may be delineation of an AOPC boundary to support the FS. There are probably less elaborate methods to resolve this question at this stage. However, if the team sees that there is value in rerunning the hill topping evaluation as a data gaps exercise, I would encourage finding a way to have the LWG do this as they would be set up make this change quickly.

2. Page 10-18, Site-Wide Risk from Crappie, Carp and Bullhead – This analysis assumes that these fish range across the entire site, including the channel, which is different than the model used for bass which restricts their exposure to the sides of the river. Do these fish spend time in the channel as implied by the analysis?
3. Page 10-32 – iAOPC Rules – Rule 1 requires that two or more risk areas overlap to ID an iAOPC. The LWG should identify any areas that were dropped from consideration because only one risk area was present. This will allow for a hand check that the rule did not result in the dismissal of what would normally be considered an area of concern. This will probably not impact data gaps, but I cannot say for sure.
4. Perchlorate – Perchlorate drops out of the human health risk assessments (no fish or shellfish data), and other than indirect reference to TZW data it is not carried into the iAOPC development. I believe we also have very little surface water data as it is generally considered an Arkema specific contaminant. Studies have generally shown that perchlorate is taken up into any tissue (plant, fish or animal) that is exposed to water containing the perchlorate salt. Consequently, I would expect to find perchlorate in fish and shellfish in the vicinity of Arkema, and it may well be a concern for human consumption of local fish. Upland source control is moving forward and will cutoff of the perchlorate plume. As a mobile soluble contaminant,

perchlorate will eventually attenuate in-water, but this could take quite a while given the current in-river groundwater concentrations.

Is additional in-river surface water, or tissue data needed for perchlorate? Unless the potential risk from TZW to benthics and shellfish result in an eco risk it will not make it into the LWG FS. Capping is unlikely to be effective. Perchlorate is present in sediment pore water and not sorbed to sediment. That leaves in-situ treatment or natural attenuation.

I am not strongly advocating that this data gap be filled, but I want to identify it for discussion. If it is a data gap that we want filled, we also need to decide if is addressed by Arkema as part of the early action or the LWG.

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